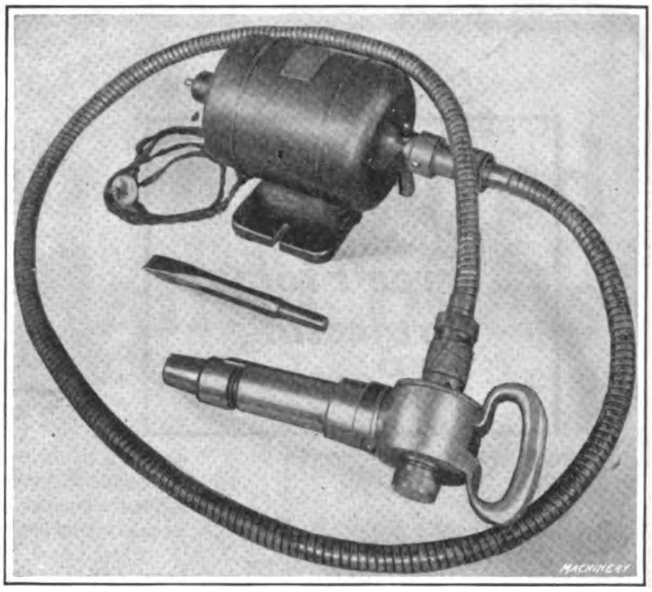
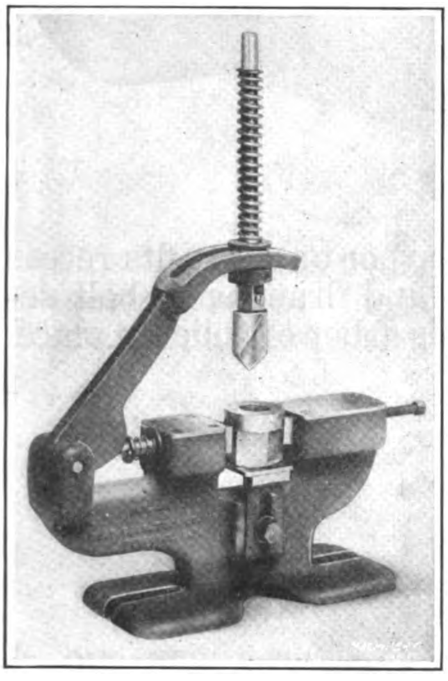


Fig. 1. Pneumatic Hammer made by the Titan Automatic Tool Co.

TITAN PNEUMATIC HAMMER

The Titan pneumatic hammer which is being placed on the market by the Titan Automatic Tool Co., 25 W. Broadway, New York City, is noteworthy both as regards its simplicity of design and its range of adaptability. Its scope is as broad as that of the well-known pneumatic hammer, and it is said to fill all the functions of that type of tool. The Titan hammer is manufactured in all the ordinary sizes, but in addition it is made in very small sizes for engraving and other work of that nature. One of the chief claims made for this hammer is its portability. A complete outfit is illustrated in Fig. 1, showing a 1/3-horsepower motor, flexible shaft, and the hammer proper. Unlike other pneumatic hammers, which usually require an air storage tank, this one is operated by air which is generated within itself. The motor and flexible shaft are of ordinary construction, and hence this description will relate largely to the operation and construction of the hammer.



Skelton Burring Fixture which is applied to a Drilling Machine for burring, chamfering, counterboring or reaming Parts after they leave the Screw Machine

In outer appearance the hammer resembles that of the ordinary pneumatic hammer, but instead of being connected to the source of power by a rubber air hose, it is connected with a flexible shaft through which the power is transmitted to the hammer. The construction is comparatively simple, the main hammer consisting of only thirteen parts which are clearly illustrated in Fig. 2. The principal parts consist of the body *A* and *B*, Fig. 3, piston *C*, cylinder *D*, sleeve *E*, floating plunger *G* and tool guide *H*.

In operation, the piston *C* is reciprocated by the crank *J* through the medium of the connecting-rod *K*. Inasmuch as there is a free passage for the air through the port holes *L* in the cylinder *D* which line up when in the neutral position with channels in the sleeve *E*, the atmospheric pressure on both ends of the floating plunger *G* is practically the same, causing no action of the plunger, although the piston is reciprocating. As soon as the operator of the hammer exerts pressure on the tool from the handle end of the hammer, the cylinder *D* is pushed upward against the pressure of the spring. In so doing the first row of port holes *L* are covered up, causing the piston to reciprocate with a reduced area for the escape of air, which results in a reduction in the pressure of the air within the chamber, thus causing the floating plunger *G* to reciprocate in harmony with it. The force of the blow hit by the floating plunger *G* on the end of the chisel or other tool which projects through the tool-holder *H* will be light at first, but it increases gradually to the full power as the cylinder *D* is pushed further backward, covering up more and more of the port holes.

The blow is imparted to the chisel or tool by the impact of the floating plunger *G* on the end of the tool which protrudes a short distance above the shoulder *M* on the tool guide *H*. The tendency of the floating plunger *G* to hit as hard a blow

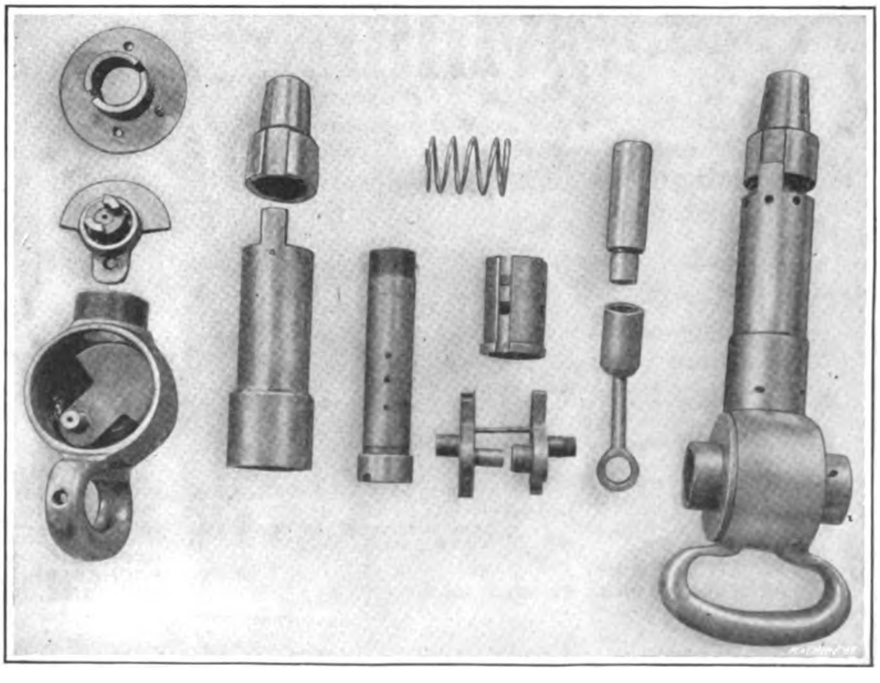


Fig. 2. Parts of the Titan Pneumatic Hammer shown in Fig. 1

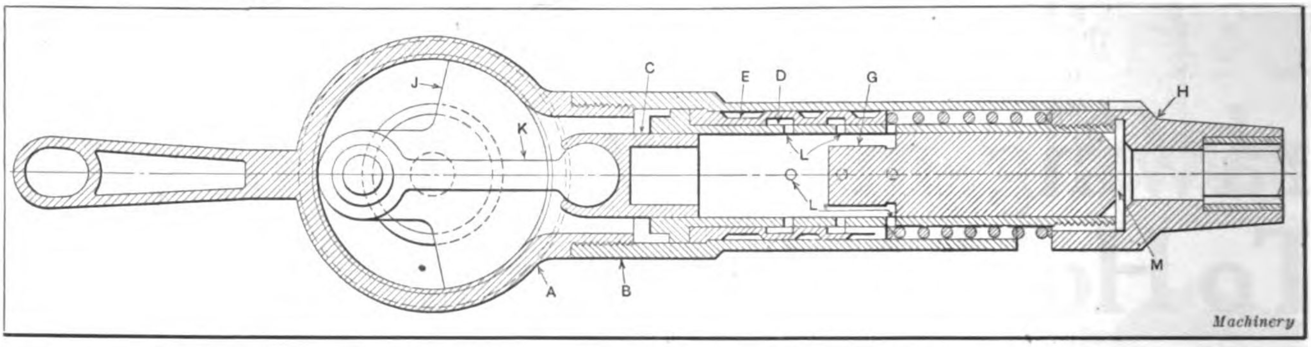


Fig. 3. Longitudinal Sectional View of the Titan Pneumatic Hammer

against the piston on the return stroke is neutralized by the cushioning effect that is obtained when the small end of the plunger enters the recess in the piston *C* which it fits loosely. The recess in the piston is slightly bell-mouthed and the end of the plunger is slightly tapered, so that they will enter one another readily.

The advantages claimed for the new Titan pneumatic hammer are its simplicity, low cost of operation, absence of valves and portability, since it is obvious that it can be quickly set up for operation wherever electric current is available. There is no long hose line required with its accompanying motor and air-compressor outfit. Another advantage of this hammer is the ability to obtain a graduated blow simply by the operator's pushing downward more or less on the operating handle, which causes the hammer to give a light or heavy blow as previously described. An entire outfit of this kind may be packed in a small portable case and moved from place to place with the greatest of ease.

reached the required depth, the spindle is released and remains neutral; then when the direction of rotation is reversed, the tap is backed out at a ratio of 7 to 1. The reverse clutch of the tapping attachment is automatically engaged when the feed of the drilling machine spindle is reversed to back the tap out of the hole.

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